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Office of Water
Enforcement and Permits
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EPA

NPDES
Self-Monitoring System

User Guide

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NPDES SELF-MONITORING SYSTEM

USER GUIDE

Office of Water
Office of Water Enforcement and Permits

January 1985

U.S. Environmental Protection Agency
EN-338
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Washington, D.C. 20460

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NPDES
Self-Monitoring System

User Guide

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INTRODUCTION

The major goal of the National Pollutant Discharge Elimination System (NPDES) program is to improve the nation's water quality by reducing or eliminating pollutants from waste streams discharging directly into our waterways. The major instrument used to achieve the goal is the NPDES permit which sets limits on the pollutants in direct discharge effluents. The permit then is a legally enforceable agreement between the regulatory agency (EPA/State) and the direct dischargers on the quality of effluent released into receiving waters. As with any agreement, in order to be successful both parties must abide by their commitments. Over and above this is the result that both permit issuer and permit holder become integral participants in the drive for clean water.

This booklet is designed to assist the NPDES permittee in developing, operating, and maintaining a self-monitoring system which will enable the permittee, at a minimum to comply with permit requirements.

The amount of time spent each day on monitoring, recording, and reporting will pay off in more efficient plant operation, and a higher quality effluent, and will ultimately result in achieving the goal of improved water quality.

NPDES Program Authority

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, gives the Environmental Protection Agency (EPA) the authority to regulate the discharge of pollutants to waters of the United States. The Act provides broadly defined authority to establish the National Pollutant Discharge Elimination System (NPDES) Permit Program, to define control technologies, to establish effluent limitations, to obtain information through reporting and compliance inspections, and to take

enforcement actions (both civil and criminal) when violations of the Act are found.

Legal Authority for NPDES Monitoring of Discharges

Dischargers of pollutants are issued permits under Section 402 of the Act that set specific limits and operating conditions to be met by the permittee. The Act authorizes inspections and monitoring to determine whether or not NPDES permit conditions are being met. It provides for two types of monitoring:

- Self-monitoring, where the facility must monitor itself; and
- Compliance monitoring, which may consist of checking and/or inspecting the self-monitoring program or monitoring conducted by the regulatory agency.

Inspection Authority

According to Section 308 of the Act, EPA may request and collect information by various means including the conduct of an inspection wherever there is an existing NPDES permit, or where a discharge exists or is likely to exist and no permit has been issued.

State Program Authority

Much of the compliance monitoring in the NPDES program takes place at the State level. The Clean Water Act provides for the transfer of Federal program authority to the States to conduct NPDES permit compliance monitoring. EPA Regional Administrators and some State water pollution control agencies have signed formal cooperative agreements that ensure timely, accurate monitoring of compliance with permit conditions.

Inspection of NPDES Permittee Facilities

Under the NPDES program the regulatory agency may conduct inspections of permittee facilities to verify that permit requirements are being met. Inspections may be limited and routine unless suspected violations of permit requirements are uncovered, at which point a more in-depth investigation may follow. Inspections are conducted by trained, qualified inspectors whose main responsibilities are to gather information that can be used to determine compliance with permit conditions, applicable regulations, and other requirements. Inspections conducted under the NPDES program extend to all things relating to compliance with the permit, including files, operating logs, and records; and treatment processes, controls, and facilities.

Meeting Permit Requirements

Introduction

The permits issued under the NPDES program impose precise and detailed pollution control requirements on direct dischargers. Permits are written so that they:

- Limit discharges of effluents based on national technology-based guidelines and, where necessary, on water quality standards;
- Require permittees to monitor their discharges and report results and any violations to the permitting agency; and
- Where necessary, impose compliance schedules that the permittee must adhere to in abating pollution and in complying with specified effluent limitations.

The permittee is responsible for understanding and meeting all permit requirements.

Self-Monitoring Responsibilities

The permit stipulates the self-monitoring requirements that are the responsibility of the discharger. Typically, this portion of the permit sets forth the frequency and type of sampling (grab and/or composite) requirements, as well as the flow monitoring, analytical, and data reporting requirements. The required information obtained by the permittee's self-monitoring program is reported to the permitting agency generally through the submission of a Discharge Monitoring Report (DMR). The DMR is submitted to the permitting agency on a specific schedule delineated in the permit. The validity, or quality, of the DMR data is the responsibility of the permittee and is a direct result of the adequacy and functioning of the permittee's self-monitoring program. For the program to function properly, it must be organized in a way that provides correct and reliable data and the appropriate responses required by the permit.

ORGANIZING A SELF-MONITORING PROGRAM

The overall objectives of a self-monitoring program are to collect, analyze, and report accurate data that is representative of the actual discharge(s) as required by the permit and to produce the data necessary to determine facility compliance with permit effluent limitations.

A properly organized and maintained program will aid in:

- o Identifying problem areas that could result in noncompliance situations;
- o Rapidly discovering and rectifying noncompliance episodes;
- o Reporting noncompliance as required by the permit;
- o Reporting accurate and timely self-monitoring data via the DMR;
- o Reporting other permit required data; and
- o Establishing a consistent, regular program of self-monitoring evaluation.

Elements of a Self-Monitoring System

A self-monitoring program can be viewed as an organized system of components, typically including sampling, flow measurement, laboratory and field analyses, recordkeeping, reporting, and data quality assurance. It consists of both technical and administrative activities, which are of equal importance to the smooth and proper operation of the program and to meeting permit requirements. There are certain generic elements common to developing and maintaining a successful self-monitoring program; these elements are:

- o Reviewing permit requirements and setting program objectives;

- o Establishing staff training;
- o Developing a quality assurance (QA) plan; and
- o Conducting periodic evaluations of the program.

Reviewing Permit Requirements and Setting Program Objectives

The specific elements of the self-monitoring program are stipulated in the permit. The general areas of concern in setting the program objectives are:

- o Effluent limitations (qualitative and quantitative)--for example, average and maximum concentrations and average and maximum daily loads.

- o Self-monitoring requirements--location, frequency, and type of sampling (grab or composite), flow monitoring, methods of analysis, and data reporting requirements (including noncompliance incidents).

The program objectives are set so that self-monitoring will yield accurate data on the quality of the effluent in accordance with the requirements in the permit. Therefore, an acceptable self-monitoring program will include:

- o Frequency and type of effluent sampling at permit-specified locations;
- o Flow measurements;
- o Sample analysis to determine effluent quality;
- o Accurate recordkeeping for all activities specified in the permit;
- o Data reporting via the DMR in the manner specified in the permit; and
- o Other reporting as required by the permit.

Staff Training

A capable and qualified staff is a basic requirement of a self-monitoring program. It is the responsibility of the permittee to ensure that the staff is properly trained and qualified to perform the activities and report the results in accordance with the permit requirements. This holds true whether the facility uses its own staff or outside consultants.

When developing in-house or selecting outside training programs, the following instruction areas should be considered:

- Sampling (including proper preservation methods) and flow measurement procedures;
- Laboratory procedures, including proper sample handling, analysis, quality control, data manipulation, and recordkeeping and reporting procedures;
- Proper use of instruments and equipmment including appropriate calibration procedures and schedules;
- Preventive maintenance practices;
- Equipment trouble-shooting; and
- Safety procedures, including handling emergencies.

Various relevant training alternatives are sponsored by regulatory agencies, industry associations, professional societies, and colleges and universities. If required by the regulatory agency, proper certification and/or license must be obtained.

Taking into consideration the technical and procedural training aspects discussed above, the overall facility training program should be organized so that it includes the following elements:

- o Orienting new staff;
- o Training new supervisors;
- o Training new technicians;
- o Continued training and updating of existing staff; and
- o Cross-training staff members to provide backup.

Developing a Quality Assurance (QA) Plan

The establishment of an effective QA plan is essential to the proper functioning of an NPDES self-monitoring program. The overall objective of the QA plan is to ensure the production and reporting of accurate data to the regulatory agency. It also provides data that facility management can use to assess the performance of the facility.

The QA plan must consider and integrate all elements of the self-monitoring program, both administrative and technical. In general the QA plan should cover the following elements:

- o Sample collection
  - Proper sampling procedures and equipment used
  - Sample type, frequency, method, and location in accordance with permit requirements
  - Sample preservation procedures currently accepted by regulatory agency
  - Sampling activity records
  - Control checks (duplicate samples, split samples, spike samples, and sample preservative blanks) performed during the actual sample collection to determine the accuracy of the sample collection system
  - Proper procedure and schedule used for calibration and maintenance of automatic samplers

- o Flow measurement
  - Functioning of primary and secondary measurement devices
  - Procedures and schedule for calibrating secondary devices
  - Regular maintenance and inspection of primary device
  - Documentation of flow measurements and associated activities
  - Evaluation of accuracy and precision of flow measurement devices

- o Laboratory operations
  - Proper sample handling procedures
  - Sample analysis procedures currently accepted by regulatory agency
  - Proper procedures and schedule used for calibration and maintenance of instruments and ancillary equipment
  - Accuracy and precision of analyses monitored
  - Proper staff training
  - All above activities accurately documented

- o Recordkeeping and reporting
  - Recordkeeping and reporting in accordance with permit requirements
  - Recordkeeping system organized to facilitate retrieval
  - Recordkeeping system organized to produce accurate and complete reports (especially DMRs) when required

Periodic Evaluation of Self-Monitoring Program

Integral to the efficient continued functioning of the self-monitoring program is the establishment of procedures and a regular schedule of program evalution. The following elements should be included:

- o Confirm that sampling and flow measurement equipment is being maintained properly;

- o Verify that analyses are being performed properly and equipment is in good working order;
- o Verify that currently approved analytical methods are being used;
- o Verify that proper quality control procedures are being employed; and
- o Verify that recordkeeping and reporting systems are being maintained properly.

The checklists that appear at the end of this booklet can be used in conducting self-evaluation and periodic checks on the various components of the self-monitoring program.

Discharge Monitoring Reports (DMRs)

The DMR is a routine compliance report that gives a summary of the quality and/or quantity of the permittee's discharge. The DMR is submitted to the regulatory agency in accordance with a schedule which is stipulated in the permit, usually monthly or quarterly. It provides data on facility flow, sample collection, and analytical results. It is extremely important that the data reported on the DMR be accurate and timely because the reported data will be compared with permit effluent limitations to determine facility compliance.

How to Use the Discharge Monitoring Report Form

A Discharge Monitoring Report Form (Figure 1) is used for the routine reporting of effluent compliance data. This form generally is completed each month for each permitted discharge having specific effluent limitations and/or monitoring requirements.

Although the permit may limit pollutants on a 30-consecutive day average and a 7-consecutive day average, to simplify reporting procedures, it is acceptable to report the 30 day average as the average for the calendar month. Likewise, the 7-consecutive day average may be reported as the average for each calendar week ending during the month.

Detailed instructions for completing the form and performing relevant calculations follow the sample form.

PERMITTEE NAME/ADDRESS (*Include Facility Name/Location if different*)

NAME

ADDRESS

FACILITY

LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (*NPDES*)

DISCHARGE MONITORING REPORT (*DMR*)

Form Approved.
OMB No. 2040-0004
Approval expires 9-30-85

(2-16) PERMIT NUMBER

(17-19) DISCHARGE NUMBER

MONITORING PERIOD

FROM YEAR (20-21)	MO (22-23)	DAY (24-25)	TO YEAR (26-27)	MO (28-29)	DAY (30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319 (*Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years*)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE — AREA CODE — NUMBER

DATE — YEAR — MO — DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

PAGE OF

EPA Form 3320-1 (Rev. 10-79) PREVIOUS EDITION TO BE USED UNTIL SUPPLY IS EXHAUSTED

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

Figure 1 Discharge Monitoring Report Form

GENERAL INSTRUCTIONS

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already preprinted.
2. Enter "PERMITTEE NAME/MAILING ADDRESS (and facility name/location, if different)," "PERMIT NUMBER," and "DISCHARGE NUMBER" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "MONITORING PERIOD" covered by form where indicated.
4. Enter each "PARAMETER" as specified in monitoring requirements of permit.
5. Enter "SAMPLE MEASUREMENT" data for each parameter under "QUANTITY" and "QUALITY" in units specified in permit. "AVERAGE" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "MONITORING PERIOD." "MAXIMUM" and "MINIMUM" are normally extreme high and low measurements obtained during "MONITORING PERIOD." (NOTE to municipals with secondary treatment requirement, enter 30-day average of sample measurements under "AVERAGE" and enter maximum 7-day average of sample measurements obtained during monitoring period under "MAXIMUM".
6. Enter "PERMIT REQUIREMENT" for each parameter under "QUANTITY" and "QUALITY" as specified in permit.
7. Under "NO. EX" enter number of sample measurements during monitoring period that exceed maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "0".
8. Enter "FREQUENCY OF ANALYSIS" both as "SAMPLE MEASUREMENT" (actual frequency of sampling and analysis used during monitoring period) and as "PERMIT REQUIREMENT" specified in permit. (e.g., Enter "CONT." for continuous monitoring, "1/7" for one day per week, "1/30" for one day per month, "1/90" for one day per quarter, etc.)
9. Enter "SAMPLE TYPE" both as "SAMPLE MEASUREMENT" (actual sample type used during monitoring period) and as "PERMIT REQUIREMENT." (e.g., Enter "GRAB" for individual sample, "24HC" for 24-hour composite, "N/A" for continuous monitoring, etc.)

FOLD HERE FIRST

10. WHERE VIOLATIONS OF PERMIT REQUIREMENTS ARE REPORTED, ATTACH A BRIEF EXPLANATION TO DESCRIBE CAUSE AND CORRECTIVE ACTIONS TAKEN. REFERENCE EACH VIOLATION BY DATE.
11. If "no discharge" occurs during monitoring period, enter "NO DISCHARGE" across form in place of data entry.
12. Enter "NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER" with "SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT," "TELEPHONE NUMBER" and "DATE" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this DISCHARGE MONITORING REPORT (DMR) form may be obtained from Office(s) specified in permit.

LEGAL NOTICE

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed $10,000 per day of violation; or in criminal penalties not to exceed $25,000 per day of violation, or by imprisonment for not more than one year, or by both.

FOLD HERE SECOND

PLACE STAMP HERE

FOLD HERE THIRD

STAPLE HERE

Discharge Monitoring Report
Instructions for Completion
(See Figure 1)

1. Permittee Name/Address - Record name and address of permittee. If different, the name and location of the treatment facility should also be recorded.

2. Permit Number - Record the State abbreviation and permit number, as it appears in the upper right hand corner of the permit.

3. Discharge Number - Record the number as stated in the permit for the actual discharge being reported. Usually, the effluent pipe from a treatment plant is designated as "001" (Use three digits).

4. Monitoring Period - Record the dates for the beginning and end of the monitoring period. Specify "YEAR, MO, DAY" (e.g. 84/04/29). Monitoring period is from the first day to the last day of the calendar month.

5. Parameter - Enter the parameters specified in the permit, one parameter per box. Include any applicable special conditions.

6. Sample Measurement - Enter sample measurement data for each parameter under "Quantity or Loading" or "Quality or Concentration" in accordance with permit limitations. Indicate units as specified in permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during the monitoring period. "Maximum" and "Minimum" are normally extreme high and low measurements obtained during the monitoring period. (Municipals with secondary treatment requirement should enter 30-day average of sample measurements under "Average" and enter maximum 7-day average of sample measurements obtained during monitoring period under "Maximum." (See instruction "for example calculations.")

7. Permit Requirement - Enter requirement for each parameter as specified in the permit under "Quality or Loading" or "Quality or Concentration".

8. No. Ex. (Number of Exceptions). Enter the number of sample measurements as calculated values for the monitoring period that exceed (maximum and/or minimum, 7-day average, etc.) the permit requirements for each parameter. The number should be the total of all exceptions during the reporting period--includes loading and quality or concentration limits. If none, enter "0".

9. Frequency of Analysis - Enter frequency of analysis which is the actual frequency of sampling and analysis used during the monitoring period; the minimum is as specified in permit. Enter "CONT" for continuous monitoring, "01/07" for one day per week, "01/30" for one day per month, "01/90" for one day per quarter, etc.

10. Sample Type - Enter the sample type both as Sample Measurement (actual sample type used during monitoring period) and as Permit Requirement. Enter "GRAB" for individual sample, "24HC" for 24-hour composite, "N/A" for continuous monitoring.

11. Completion of Reported Values. After entering each parameter, and the permit conditions for each, the values must be computed. Listed below are sample calculations.

    a. Quality or Concentration. As an example, complete the concentration (mg/L) for BOD_5. Table 1, page 15, "Monthly Monitoring Data", lists five BOD_5 tests for the month reported. The values are 19, 6, 11, 7, and 10 mg/L. The average concentration of

Table 1

Monthly Monitoring Data (Sample)
(December 1982)

		Flow	BOD_5	TSS	pH	Cl_2
1st Week	Date					
Mon	12/1	.50			7.3	2.3/1.5
Tue	12/2	.32			7.7	1.8/1.6
Wed	12/3	.33	19	34	7.4	2.3/2.3
Thu	12/4	.33			7.6	2.0/2.0
Fri	12/5	.43			6.8	2.3/1.9
Sat	12/6	.34			7.2	1.7/1.6
Sun	12/7	.25			7.4	1.7/1.7
2nd Week						
Mon	12/8	.58			7.6	0.2/1.8
Tue	12/9	.47	6	3	7.4	1.7/1.8
Wed	12/10	.42			7.0	0.0/1.6
Thu	12/11	.37			6.6	2.0/2.1
Fri	12/12	.46			6.8	1.8/2.0
Sat	12/13	.32			7.0	1.9/1.9
Sun	12/14	.27			7.0	1.7/1.8
3rd Week						
Mon	12/15	.62			7.4	1.6/1.8
Tue	12/16	.61			7.5	2.1/2.0
Wed	12/17	.61			6.9	1.9/2.0
Thu	12/18	.60	11	15	7.3	1.6/1.8
Fri	12/19	.46			6.8	1.6/1.7
Sat	12/20	.36			7.2	1.6/1.9
Sun	12/21	.40			7.4	1.8/1.7
4th Week						
Mon	12/22	.52	7	6	6.8	0.0/0.0
Tue	12/23	.40	10		7.2	0.3/1.8
Wed	12/24	.38			6.9	1.9/2.1
Thu	12/25	.45			7.0	2.0/1.9
Fri	12/26	.42			7.1	1.8/2.3
Sat	12/27	.39			7.2	1.6/1.8
Sun	12/28	.42			7.0	1.7/1.9
5th Week						
Mon	12/29	.64			6.8	1.7/1.9
Tue	12/30	.45			7.2	2.0/1.8

10.6 mg/L was determined by adding these five values and dividing by the number of values.

The highest concentration (19 mg/L) and the monthly average concentration (10.6 mg/L) are entered on the monthly monitoring report as maximum and average concentration, respectively. The total number of exceptions (permit conditions exceeded) for average and maximum concentrations must be entered in the "No. Ex." boxes on the report for each parameter. In the sample illustration, there were no noncompliances of the permit conditions, thus, no exceptions. The "average" figure reported will correlate with the "average monthly" limit in the discharge permit and the "maximum" figure reported will correlate with the "maximum daily-maximum instantaneous concentration" limits in the discharge permit.

Use the above procedures for calculating and reporting concentrations (mg/L) for total suspended solids, phosphorus, ammonia, metals, etc.

b. Quantity or Loadings (lbs/day or kg/day). The "average monthly discharge" is the total of the daily loads (in pounds) as derived from each day's calculated measurement divided by the number of days during the month the measurements were made. In completing calculations for these averages, quantities or loadings are to be reported in lbs/day or kg/day using the following equations:

Quantity (lbs/dy) = Flow (MGD) x conc. (mg/L) x 8.34 (lbs/gal)
Quantity (kg/dy) = Flow (MGD) x conc. (mg/L) x 3.79 (kg/gal)

Table 2

5-Day Biochemical Oxygen Demand (BOD_5)
(Sample Calculation)

	Flow (MGD)	x BOD_5 (mg/l)	x 8.34 (lbs/gal)	= Quantity (lbs/dy)
1st Week Wed	.33	19	8.34	52.29
2nd Week Tue	.47	6	8.34	23.52
3rd Week Thu	.60	11	8.34	55.04 (highest)
4th Week Mon	.52	7	8.34	30.36
Tue	.40	10	8.34	33.36

Daily Average = $\frac{52.29 + 23.52 + 55.04 + 30.36 + 33.36}{5} = \frac{194.57}{5}$ = 38.9 lbs/dy

Maximum = 55.0 lbs/dy

BOD_5 Daily Average Loading (lbs/dy) = 38.9 lbs/dy
BOD_5 Maximum Daily Loading (lbs/dy) = 55.0 lbs/dy

Total Suspended Solids (TSS)
(Sample Calculation)

	Flow (MGD)	x TSS (mg/l)	x 8.34 (lbs/gal)	= Quantity (lbs/dy)
1st Week Wed	.33	34	8.34	93.57 (highest)
2nd Week Tue	.47	3	8.34	11.76
3rd Week Thu	.60	15	8.34	75.06
4th Week Mon	.52	6	8.34	26.02

Monthly Average = $\frac{93.57 + 11.76 + 75.06 + 26.02}{4} = \frac{206.41}{4}$ = 51.6 lbs/dy

Maximum = 93.57 lbs/dy

TSS Daily Average Loading (lbs/dy) = 51.6 lbs/dy
TSS Maximum Dialy Loading (lbs/dy) = 93.6 lbs/dy

Enter the average monthly loading for BOD_5 (38.9 lbs/dy in the Table 2 example) and the maximum daily loading (55.0 lbs/dy) on the DMR as "average" and "maximum", respectively. The total number of exceptions (permit conditions exceeded) for the average and maximum must be entered in the "No. Ex." box on the report. As with BOD_5, Total Suspended Solids averages are entered on the DMR. (Table 2, lower, illustrates TSS calculations.)

c. Flow. When flow is to be monitored the average monthly flow is the average of all the daily determinations of flow made during the monthly reporting period. The flow from the sample illustration (Table 1) was computed to be 0.44 MGD. The daily maximum flow is the highest daily flow observed during the monthly reporting period. This was 0.64 MGD which occurred on Monday of the 5th week in the sample illustration. The monthly average and daily maximum flow should be determined from available data. Daily flow and concentration are used in calculating loadings. Enter both these two values on the report form. The total number of exceptions (permit conditions exceeded) for average flow must be entered in the "NO. EX" box on the report.

d. pH (Standard Units, S.U.). The minimum and the maximum values for pH allowed in a discharge permit are usually listed toward the bottom of the "Effluent Limitations" page. Reported values should be extremes only, of all the test values determined during the reporting month. (Reference to the sample monitoring data [Table 1] indicates that the maximum pH is 7.7 S.U. and the

minimum is 6.6 S.U.) Enter these values on the monthly report along with the number of noncompliances (exceptions).

e. Total Chlorine Residual. The total chlorine residual concentrations (mg/L) reported are the maximum and minimum values only, of all the determinations made during the reporting month. (Reference to the sample monitoring data [Table 1] indicates indicates that the maximum total chlorine residual (Cl_2) is 2.3 mg/L and the minimum is 0.0 mg/L.) Enter these values on the monthly report after "Total Chlorine Residual," along with number of exceptions.

12. Complete the bottom of the monitoring report with the name and title of the principal executive officer, the date and the telephone number, along with the signature of the principal executive officer or authorized agent. Mail to the appropriate regulatory agency listed in the permit.

13. All limited parameters, as well as any parameters with monitoring requirements listed in the permit currently in effect must be reported.

14. All monitoring requirements of the permit are minimum requirements. The results of any additional monitoring of parameters at the location(s) designated in the permit, using approved analytical methods, must be included in the monthly monitoring report. Such increased frequency should also be indicated in the report.

15. If no discharge occurs during the month, a report must still be submitted, simply enter "No Discharge" across the face of the report for that reporting month.

16. Definitions:

    a. Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

    b. Average weekly discharge limitation means the highest allowable average of "daily discharges" over a seven day period calculated as the sum of all "daily discharges" measured during that period divided by the number of "daily discharges" measured during that week.

    c. Maximum daily discharge limitation means the highest allowable "daily discharge."

    d. Minimum or Maximum Value. The lowest or highest value measured during the month.

    e. Composite Sample. A combination of individual samples (aliquots) obtained at intervals over a time period. If any instantaneous flow varies by more than 15% from the average, the composite sample must be proportional to flow. Either the volume of each individual sample is proportional to the discharge flow rate or the sampling interval is proportional to

the flow rates over the time period used. For a continuous discharge, a minimum of 8 individual grab samples should be collected and combined to constitute a 24-hour composite sample. Composite sampling protocols delineated in the permit take precedence.

f. Grab Sample. An individual sample collected in less than 15 minutes.

17. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becames aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit.

b. Any upset which exceeds any effluent limitation in the permit.

c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

Checklist for Self-Monitoring

A. Permit Verification

Yes No N/A	1. Name, mailing address, and telephone numbers on permit are correct.
Yes No N/A	2. Facility is correctly described in permit.
Yes No N/A	3. Notification has been given to EPA/State of new, different, increased discharges.
Yes No N/A	4. Number and location of discharge points are as described in the permit.
Yes No N/A	5. Name and location of receiving waters are correct.
Yes No N/A	6. All discharges are permitted.

B. Recordkeeping and Reporting

Yes No N/A	Records and Reports are Maintained as Required by Permit
Yes No N/A Yes No N/A Yes No N/A	1. All required information is available, complete, and current; and 2. Information is maintained for required period (3 years). 3. The data reported on the DMRs are consistent with analytical results.
Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A	4. Sampling and Analysis Data are adequate and include: a. Dates, times, location of sampling b. Name(s) of individual(s) performing sampling c. Analytical methods and techniques used d. Results of analysis e. Dates and times that analysis began f. Name of personnel performing analysis g. Instantaneous flow at grab sample stations h. 24-hour flow for composite samples
Yes No N/A Yes No N/A	5. Monitoring records are adequate and include a. Flow, pH, D.O., etc. as required by permit b. Monitoring strip charts
Yes No N/A	6. Laboratory equipment calibration and maintenance records are adequate.

C. Sampling Evaluation

Yes No N/A	1. Samples are taken at sites specified in permit.
Yes No N/A	2. Locations are adequate for representative samples.
Yes No N/A	3. Flow proportioned samples are obtained where required by permit.
Yes No N/A	4. Parameters and sampling frequency comply with permit.
Yes No N/A	5. Method of sample collection required by permit is being used. Required Method: ( ) Grab ( ) Manual composite ( ) ( ) Automatic composite
Yes No N/A Yes No N/A Yes No N/A	6. Sample collection procedures are adequate: a. Samples refrigerated during compositing b. Proper preservation techniques used c. Containers and sample holding times before analyses conform with 40 CFR 136.3
Yes No N/A	7 Monitoring and analyses are performed more often than required by permit. If so, results reported in self-monitoring report.

D. DMR Completion

Yes No N/A	1. All data that are collected are summarized on the DMR.
Yes No N/A	2. Monthly and weekly average loading values are calculated using daily loading information.
Yes No N/A	3. Bacteria data are summarized as a geometric mean where required by permit.
Yes No N/A	4. The maximum and minimum values of all data points are reported where required by permit.
Yes No N/A	5. The number of exceptions column (No. Ex.) is completed properly.

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